

## CONTAINER FOR VACUUM PACKING

### **Technical Field**

The present invention relates to a container for vacuum packing, which is put into a vacuum bag while containing food in the container. More particularly, the present invention relates to a container for vacuum packing, which is constructed so that food is laid on a base panel of the container, and air is easily drawn from an interior to an open end of a vacuum bag, thus allowing food or the like to be easily and hygienically vacuum packed.

### **Background Art**

Generally, vacuum bags are used to vacuum pack and store food or the like. When 10 a user desires to vacuum pack food using a vacuum bag, the food is put into the vacuum bag. Afterwards, air is drawn from the vacuum bag and an open end of the vacuum bag is sealed by a vacuum packing apparatus. Some of the conventional vacuum bags do not have embossments. However, in order to smoothly create a vacuum in a vacuum bag, vacuum bags with embossments have been widely used.

15 One conventional type of vacuum bag is disclosed in Korean Patent Laid-Open Publication No. 92-0700998, which has embossments and is titled "apparatus for vacuum sealing plastic bags". As shown in FIG. 1, embossments 25 are formed on an inner surface of a bag 21. Thus, when an item is vacuum packed, an air discharge path is defined by the embossments 25. The bag is evacuated and heat sealed by the vacuum packing apparatus 20 20 shown in FIG. 2.

In a detailed description, the conventional vacuum packing apparatus 20 includes a base 32 and a hood 33. A vacuum chamber 34 is defined between the base 32 and the hood

33. The vacuum packing apparatus also includes a vacuum pump (not shown) to draw air from the vacuum chamber 34, and a sealing means 50 to heat seal an open end of the bag 21.

When the bag 21 containing an item is vacuum packed using the conventional chamber-type vacuum packing apparatus, the item is put into a storage space defined in the bag

5 21. The open end of the bag 21 is placed in the vacuum chamber 34. Next, the hood 33 is pressed over the base 32, so that the vacuum bag and the vacuum chamber are sealed. Thereafter, when a predetermined switch is pressed, the vacuum pump operates. In response to the operation of the vacuum pump, a vacuum is created in the vacuum chamber 34 and the bag 21. In such a state, the open end of the bag 21 is heat sealed by the sealing means 50.

10 As shown in FIG. 1, the embossments 25 are formed on the inner surface of the bag 21, thus allowing air to be smoothly exhausted from the bag 21.

### **Disclosure of Invention**

#### **Technical Problem**

However, the conventional vacuum bag with the embossments is problematic in that 15 the embossments must be directly formed on the bag, so that a bag manufacturing process is complex. Further, since the vacuum bag is heat sealable, the bag must be made of a relatively thin material, such as polyethylene or polypropylene. However, the thin material is weak, so that it is torn easily. Thus, it is difficult to directly form the embossments on the bag made of the weak material. This increases manufacturing costs of the vacuum bag. Further, the 20 embossments may be broken by a pair of rollers that is heated during the manufacturing process, thus resulting in a defective product.

According to the prior art, food to be vacuum packed is held in the vacuum bag, so that several operations are required to put the food into the bag, thus causing inconvenience to a

user. Especially, when water contained in the food covers the open end of the vacuum bag, it is impossible to perfectly heat seal the bag. Further, it is complicated to take the vacuum packed food out of the vacuum bag. In the case of storing the vacuum packed food in a freezer, juice of the food may adhere to the vacuum bag while the food is frozen.

5 In addition to the above-mentioned problems, the conventional vacuum packing method is problematic in that food held in the vacuum bag may move, so that it has an undesirable appearance and is unhygienic. Further, when two or more kinds of food items are put into the vacuum bag, the food items may undesirably mix with each other.

### Technical Solution

10 Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide a container for vacuum packing, which allows an item to be vacuum packed, such as food, to be put into a vacuum bag at one time, and which has a front portion allowing air to be easily drawn from an interior to an open end of the bag, thus allowing a vacuum to be easily created  
15 in the vacuum bag.

Another object of the present invention is to provide a container for vacuum packing, which has a juice storage trough at a position around a base panel so that juice from the food is collected in one place, thus allowing the food to be stored sanitarily, and which allows the food to be naturally divided into solids and juice during the storage of the vacuum packed food, thus  
20 being convenient to use.

A further object of the present invention is to provide a container for vacuum packing, which is constructed so that the length of a base panel is adjustable, thus allowing the length of the base panel to be adjusted according to the amount of food.

In order to accomplish the above objects, the present invention provides a container for vacuum packing, including a base panel to be put into a vacuum bag, with an item to be packed being laid on the base panel, and a front panel provided at a front position of the base panel, with an air hole formed on the front panel.

5 Preferably, a lower guide panel extends outwards from a position under the air hole to a predetermined position, and an upper guide panel extends outwards from a position above the air hole to a predetermined position.

Embossments are provided on the base panel to define an air discharge path, and a juice storage trough is provided at a position around the base panel.

10 Further, the base panel is adjustable in length.

### Description of Drawings

FIG. 1 shows a conventional vacuum bag with embossments;

FIG. 2 shows a conventional vacuum packing apparatus;

15 FIG. 3 shows a container for vacuum packing, according to the first embodiment of the present invention;

FIGS. 4 and 5 show a container for vacuum packing, according to the second embodiment of the present invention;

FIG. 6 shows the state where an item is vacuum packed using the container of FIG. 5;

20 FIG. 7 shows a container for vacuum packing, according to the third embodiment of the present invention;

FIGS. 8 and 9 show a container for vacuum packing, according to the fourth embodiment of the present invention; and

FIG. 10 shows the state where an item is vacuum packed using the container of FIG. 9.

### Mode for Invention

A better understanding of the present invention may be obtained through the 5 preferred embodiments with reference to the accompanying drawings.

#### First Embodiment

FIG. 3 shows the first embodiment of the present invention.

Referring to FIG. 3, a container for vacuum packing includes a base panel 100, a left panel 110, a right panel 120, a rear panel 130, and a front panel 140, with a cover 170 provided 10 on the container to close the container. Further, air holes 162 are formed on the front panel 140. An upper guide panel 160 extends outwards from a position above the air holes 162 to a predetermined position, and a lower guide panel 161 extends outwards from a position under the air holes 162 to a predetermined position.

As shown in FIG. 3, it is preferable that the container of this invention have the cover 15 170. Preferably, sliding grooves 113 and 123 are provided along the left and right panels 110 and 120, respectively, and left and right edges 171 and 172 of the cover 170 are slidably inserted into the sliding grooves 113 and 123 to cover the container. Such a cover prevents a vacuum bag from being stained with food when the container is inserted into the vacuum bag. Thereby, the vacuum bag is more reliably heat sealed.

20 Preferably, a juice storage trough 150 is provided at a predetermined position on the container, as shown in FIG. 3. Thus, juice or the like from the packed food flows into the juice storage trough 150, so that the juice is collected in one place.

As shown in FIG. 3, the air holes 162 are bored in the front panel 140 of the

container. The upper guide panel 160 extends outwards from the position above the air holes 162 to the predetermined position, and the lower guide panel 161 extends outwards from the position under the air holes 162 to the predetermined position.

The upper and lower guide panels 160 and 161 function to open an open end of the 5 vacuum bag 190. The air holes 162 formed on the front panel 140 serve as an air path, which allows air to flow from an interior of the container through the open end of the vacuum bag 190 that is opened by the upper and lower guide panels 160 and 161. As such, a vacuum can be more easily created in the vacuum bag 190 due to the upper and lower guide panels 160 and 161 and the air holes 162. Further, it is preferable that the upper and lower guide panels 160 10 and 161 together serve as a container handle.

Unlike the construction of FIG. 3, the length of the cover 170 or an upper cover 173 may be extended such that the cover 170 or the upper cover 173 protrudes forwards from the front panel 140. Such a construction allows the cover 170, 173 to serve as the upper guide panel 160.

15 The container for vacuum packing according to this invention may be made of plastics. Further, the container may comprise a disposable container using Styrofoam or an environmentally friendly material, such as pulp.

The use of the container according to this invention is as follows. Food to be packed is put into the container. The container containing the food therein is inserted into the 20 vacuum bag 190. Thereafter, a vacuum is created in the vacuum bag 190 and the vacuum bag 190 is heat sealed by the vacuum packing apparatus of FIG. 2. In this way, the vacuum packing operation is finished.

#### Second Embodiment

FIGS. 4 to 6 illustrate the second embodiment of the present invention.

The container of the second embodiment is constructed so that the length of a base panel is adjustable, thus allowing the size of the container to be varied according to the amount of food to be packed. For the length adjustment of the base panel, the base panel of FIG. 4 5 comprises an upper base panel 101 and a lower base panel 102. Further, the upper base panel 101 slides over the lower base panel 102.

As shown in the drawings, sliding grooves 116 and 126 (hereinafter referred to as 'sliding grooves for length adjustment') are provided on left and right panels 112 and 122 of the lower base panel 102. Further, sliding flanges 115 and 125 are provided on left and right 10 panels 111 and 121 of the upper base panel 101 so that the sliding flanges 115 and 125 are slidably fitted into the sliding grooves 116 and 126 for length adjustment. Further, sliding grooves 114 and 124 (hereinafter referred to as 'sliding grooves for an upper cover') are provided inside the sliding flanges 115 and 125 so that left and right edges 174 and 175 of an upper cover 173 are fitted into the sliding grooves 114 and 124 for the upper cover.

15 As shown in FIG. 4, sliding grooves 117 and 127 (hereinafter referred to as 'sliding grooves for a lower cover') are provided on the left and right panels 112 and 122 of the lower base panel 102 so that left and right edges 177 and 178 of the lower cover 176 are slidably fitted into the sliding grooves 117 and 127 for the lower cover. However, the sliding grooves 116 and 126 for length adjustment may be formed to serve as the sliding grooves 117 and 127 20 for the lower cover. For example, the sliding flanges 115 and 125 and the lower cover 176 may be inserted into the sliding grooves 116 and 126 for length adjustment.

That is, the sliding flanges 115 and 125 may be inserted into the sliding grooves 116 and 126 for length adjustment, and the lower cover 176 may be placed on the sliding flanges 115 and 125.

Preferably, a juice storage trough 150 is provided at a predetermined position of the container, as shown in FIG. 4. Thus, juice or the like from packed food flows into the juice storage trough 150 so that the juice collects in one place.

Further, air holes 162 are formed on a front panel 140 of the container for vacuum packing. An upper guide panel 160 extends outwards from a position above the air holes 162 to a predetermined position, and a lower guide panel 161 extends outwards from a position under the air holes 162 to a predetermined position.

The upper and lower guide panels 160 and 161 have the same function as those of the first embodiment.

The container for vacuum packing according to this invention may be made of plastics. Further, the container may comprise a disposable container using Styrofoam or an environmentally friendly material, such as pulp.

The use of the container according to this invention is as follows. As shown in FIG. 6, food to be packed is put into the container. The container containing the food therein is inserted into the vacuum bag 190. Thereafter, a vacuum is created in the vacuum bag 190 and the vacuum bag 190 is heat sealed by the vacuum packing apparatus of FIG. 2. In this way, the vacuum packing operation is finished.

### Third Embodiment

FIG. 7 shows the third embodiment of the present invention.

As shown in FIG. 7, a container for vacuum packing according to this invention includes a base panel 100, and embossments comprising protuberances 181 and depressions 182 are formed on the base panel 100. The embossments may be formed on only an inner surface of the base panel 100, like the protuberances 181. Further, the embossments may be

formed on only an outer surface of the base panel 100, like the depressions 182. Preferably, the embossments are formed on both the inner and outer surfaces of the base panel 100. According to the present invention, food or the like is placed on the inner surface of the base panel 100. Thus, the embossments must be formed on the outer surface of the base panel so 5 as to reliably provide an air path when air is drawn from the vacuum bag.

When the container includes panels 110, 120, 130, and 140 as shown in FIG. 7, it is preferable that embossments be formed all over the container, including inner and outer surfaces of the panels 110, 120, 130, and 140.

The embossments may comprise protuberances 181 and depressions 182 having 10 semicircular cross-sections, as shown in FIG. 7. However, embossments of any cross-sectional shape are possible, as long as the embossments provide an air path to allow air to be smoothly drawn from the vacuum bag 190 during the evacuation of the vacuum bag 190.

In comparison with the process of forming the embossments on the vacuum bag, the process of forming the embossments on the container is simpler and reduces a rate of defective 15 products. When the container having the embossments is used, it is easier and more sanitary to vacuum pack food. Further, since the container of this invention is capable of using a cheap vacuum bag 190 having no embossments, for example, a common plastic film bag, the costs of vacuum packing an item are reduced.

Preferably, as shown in FIG. 7, a juice storage trough 150 is provided at a 20 predetermined position on the container, thus allowing juice or the like from packed food to flow into the juice storage trough 150 and be collected in one place. If the embossments 181 are formed on an inner surface of the base panel 100, a juice path communicating with the juice storage trough 150 is defined, thus allowing the juice to be more efficiently collected in a predetermined place.

More particularly, as shown in FIG. 7, the container for vacuum packing also includes a front panel 140 which is positioned at a front position of the base panel 100, with air holes 162 formed on the front panel 140. An upper guide panel 160 extends outwards from a position above the air holes 162 to a predetermined position, while a lower guide panel 161 extends outwards from a position under the air holes 162 to a predetermined position. As shown in the drawing, it is preferable that embossments be formed on both surfaces of each of the upper and lower guide panels 160 and 161.

5 The upper and lower guide panels 160 and 161 function to open an open end of the vacuum bag 190. The air holes 162 formed on the front panel 140 serve as an air path that allows air to flow from the container through the open end of the vacuum bag 190 which is 10 opened by the upper and lower guide panels 160 and 161. A vacuum is more efficiently created in the vacuum bag 190 by the upper and lower guide panels 160 and 161 and the air holes 162.

15 The container for vacuum packing according to this invention may be made of plastics. Further, the container may comprise a disposable container using Styrofoam or an environmentally friendly material, such as pulp.

The use of the container for vacuum packing according to this invention is as follows. The container is put into the vacuum bag 190 while containing food to be packed therein. Thereafter, a vacuum is created in the vacuum bag 190 and the vacuum bag 190 is 20 heat sealed by the vacuum packing apparatus of FIG. 2. In this way, the vacuum packing operation is finished.

#### Fourth Embodiment

FIGS. 8 to 10 show the fourth embodiment of the present invention.

As shown in FIGS. 8 and 9, the length of a base panel is adjustable, so that the size of a container is adjustable according to the amount of food to be packed. For the length adjustment of the base panel, as shown in FIGS. 8 and 9, the base panel of the container comprises an upper base panel 101 and a lower base panel 102. Further, the upper base panel 5 101 slides over the lower base panel 102. Preferably, as shown in FIGS. 8 and 9, a front end of the lower base panel 102 is inwardly bent to provide a flange 186, and a rear end of the upper base panel 101 is outwardly bent to provide a flange 185. The flanges 185 and 186 prevent food juice from spilling out of the container, in addition to preventing the upper base panel 101 from being undesirably detached from the lower base panel 102.

10 More particularly, as shown in FIGS. 8 to 10, the container for vacuum packing also includes a front panel 140 that is positioned at the front of the base panels 101 and 102. Air holes 162 are formed on the front panel 140, with an upper guide panel 160 extending outwards from a position above the air holes 162 to a predetermined position, and a lower guide panel 161 extending outwards from a position under the air holes 162 to a predetermined 15 position. The upper and lower guide panels 160 and 161 are equal to those of the third embodiment. The container for vacuum packing according to this invention may be made of plastics. Further, the container may comprise a disposable container using Styrofoam or an environmentally friendly material, such as pulp.

20 The use of the container for vacuum packing according to this invention is as follows. The container is put into the vacuum bag 190 while containing food to be packed therein. Thereafter, a vacuum is created in the vacuum bag 190 and the vacuum bag 190 is heat sealed by the vacuum sealing apparatus of FIG. 2. In this way, the vacuum packing operation is finished.

### Industrial Applicability

As described above, the present invention provides a container for vacuum packing, which is put into a vacuum bag while containing food to be packed in the container, thus allowing a vacuum packing operation to be sanitarily and easily executed, and allowing a  
5 vacuum to be easily created in the vacuum bag.

Further, a juice storage trough is provided at a predetermined position around a base panel to collect juice or the like from food in one place, thus allowing the food to be sanitarily stored, and allowing the juice to naturally separate from the food during the storage of the vacuum packed food, therefore being convenient to use.  
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A container for vacuum packing according to this invention is constructed so that the length of a base panel is adjustable, according to the amount of food to be vacuum packed.

Further, embossments are formed on a container, thus allowing a vacuum to be easily created in a vacuum bag having no embossments.

According to the present invention, embossments are provided on a container, so that  
15 a manufacturing process is simpler and easier, in comparison with the case where embossments are formed on a thin and weak vacuum bag.

Further, the container of this invention is capable of being used with a common plastic film bag, so that the costs for a vacuum packing operation are reduced.